INDEX TO AUTHORS

ALLEN, EMMA G. See BOVARNICK and ALLEN, 169

ALLFREY, V. G., DALY, M. M., and MIRSKY, A. E. Some observations on protein metabolism in chromosomes of non-dividing cells, 415

ALTAMIRANO, MARIO, COATES, CHRISTOPHER W., and GRUNDFEST, HARRY. Mechanisms of direct and neural excitability in electroplaques of electric eel, 319

—. See GRUNDFEST, KAO, and ALTAMIRANO, 245

ANKER, H. S. See GREEN and ANKER, 283

ARRIGHI, MARY F. See HUF, WILLS, and ARRIGHI, 867

BAER, B., SHRAGER, S., and KRUEGER, ALBERT PAUL. The effect of iodoacetate and other inhibitors on phage production and lysis in three phage systems, 683

BAIR, WILLIAM J., and STANNARD, J. N. Effect of starving and dowex 50 treatment on growth of normal and x-irradiated yeast, 505

— and —. Role of electrolytes and starvation in altering apparent radiosensitivity of bakers' yeast, 493

BARSA, MARY C. The behavior of isolated hearts of the grasshopper, *Chortophaga viridifasciata*, and the moth, *Samia walkeri*, in solutions with different concentrations of sodium, potassium, calcium, and magnesium, 79

—. See LUDWIG and BARSA, 729

BEIDLER, LLOYD M. A theory of taste stimulation, 133

BLINKS, L. R. See YOCUM and BLINKS, 1

BOVARNICK, MARIANNA R., and ALLEN, EMMA G. Reversible inactivation of typhus rickettsiae. I. Inactivation by freezing, 169

BOZLER, EMIL. Binding of calcium and magnesium by the contractile elements, 735

—. Interactions between magnesium, pyrophosphate, and the contractile elements, 53

—. Relaxation in extracted muscle fibers, 149

BRANDT, C. L., SHEPARD, D. C., and GIESE, A. C. The effect of nutritional state on photoreversal of ultraviolet injuries in *Didinium nasutum*, 295

BREAN, JOHN W. See SMALL, BREAN, and FARRAR, 695

BROWN, PAUL K. See WALD, BROWN, and SMITH, 623

CLOWES, G. H. A. See KRAHL, KELTCH, WALTERS, and CLOWES, 31, 431

COATES, CHRISTOPHER W. See ALTAMIRANO, COATES, and GRUNDFEST, 319

COMMONER, BARRY, and RODENBERG, SIDNEY D. Relationships between tobacco mosaic virus and the non-virus proteins, 475

— and YAMADA, MAS. The non-virus proteins associated with tobacco mosaic virus, 459

DALY, M. M., and MIRSKY, A. E. Histones with high lysine content, 405

—. See ALLFREY, DALY, and MIRSKY, 415

DEYRUP, INGRITH J., and USSING, HANS H. Accumulation of sulfate labelled with S^{35} by rat tissue *in vitro*, 599
DOYLE, W. L. Distribution of esterase in gastric mucosa, 141

FARRAR, JOHN T. See SMALL, BREAN, and FARRAR, 695
FOULKES, E. C. Studies in cell permeability. The uptake of pyruvate by yeast, 425
FRASER, M. J., and KAPLAN, J. GORDIN. The alteration of intracellular enzymes. III. The effect of temperature on the kinetics of altered and unaltered yeast catalase, 515
FRY, WILLIAM. See HALVORSON, FRY, and SCHWEMMIN, 549
FUERST, CLARENCE R. See STENT and FUERST, 441

GASSER, HERBERT S. Properties of dorsal root unmedullated fibers on the two sides of the ganglion, 709
GIESE, A. C. See BRANDT, SHEPARD, and GIESE, 295
GOLD, G. LENNARD, and SOLOMON, A. K. The transport of sodium into human erythrocytes *in vivo*, 389
—. See SOLOMON and GOLD, 371
GREEN, H., and ANKER, H. S. Kinetics of amino acid incorporation into serum proteins, 283
GREENBERG, DAVID M. See LIN and GREENBERG, 181
GRUNDFEST, HARRY, KAO, C. Y., and ALTAMIRANO, MARIO. Bioelectric effects of ions microinjected into the giant axon of *Loligo*, 245
—. See ALTAMIRANO, COATES, and GRUNDFEST, 319

HALVORSON, HARLYN, FRY, WILLIAM, and SCHWEMMIN, DONALD. A study of the properties of the free amino acid pool and enzyme synthesis in yeast, 549
HERSHEY, A. D. Conservation of nucleic acids during bacterial growth, 145
HUF, ERNST G., WILLS, JOYCE P., and ARRIGHI, MARY F. Electrolyte distribution and active salt uptake in frog skin, 867
HUNT, CARLTON C. Monosynaptic reflex response of spinal motoneurons to graded afferent stimulation, 813
—. Relation of function to diameter in afferent fibers of muscle nerves, 117
—. Temporal fluctuation in excitability of spinal motoneurons and its influence on monosynaptic reflex response, 801
—. See LLOYD, HUNT, and MCINTYRE, 307

KALMAN, SUMNER M., and USSING, HANS H. Active sodium uptake by the toad and its response to the antidiuretic hormone, 361
KAO, C. Y. See GRUNDFEST, KAO, and ALTAMIRANO, 245
KAPLAN, J. GORDIN. The alteration of intracellular enzymes. II. The relation between the surface and the biological activities of altering agents, 197
—. See FRASER and KAPLAN, 515
KELTCH, A. K. See KRAHL, KELTCH, WALTERS, and CLOWES, 31, 431
KRAHL, M. E., KELTCH, A. K., WALTERS, C. P., and CLOWES, G. H. A. Glucose-6-phosphate and 6-phosphogluconate dehydrogenases from eggs of the sea urchin, *Arbacia punctulata*, 431
—, —, —, and —. Hexokinase activity from eggs of the sea urchin *Arbacia punctulata*, 31
KRUEGER, ALBERT PAUL. See BAER, SHRAGER, and KRUEGER, 683
—. See SMITH and KRUEGER, 161

LESSNER, JAMES M. See WASSERMAN, LESSNER, and WEST, 213

LIN, SHIH-CHIA C., and GREENBERG, DAVID M. Enzymatic breakdown of threonine by threonine aldolase, 181

LLOYD, DAVID P. C., HUNT, CARLTON C., and MCINTYRE, A. K. Transmission in fractionated monosynaptic spinal reflex systems, 307

— and MCINTYRE, A. K. Monosynaptic reflex responses of individual motoneurons, 771

— and —. Transmitter potentiality of homonymous and heteronymous monosynaptic reflex connections of individual motoneurons, 789

LUDWIG, DANIEL, and BARSA, MARY C. Relationship between the activity of the succinoxidase system and the rate of oxygen consumption during the embryonic development of the mealworm, *Tenebrio molitor* Linnaeus, 729

MCDONALD, MARGARET R. The inactivation of dilute solutions of crystalline trypsin by x-radiation. I. Kinetics and characteristics, 93

—. II. Effects of enzyme concentration, medium, pH, and temperature, 581

MCINTYRE, A. K. See LLOYD, HUNT, and MCINTYRE, 307

—. See LLOYD and MCINTYRE, 771, 789

MILSTONE, J. H. Chromatography of blood-clotting factors and serum proteins on columns of diatomaceous earth, 743

—. Effect of blood thrombokinase, as influenced by soy bean trypsin inhibitor, ultracentrifugation, and accessory factors, 757

MIRSKY, A. E. See ALLFREY, DALY, and MIRSKY, 415

—. See DALY and MIRSKY, 405

NEIHOF, REX, and SOLLNER, KARL. A quantitative electrochemical theory of the electrolyte permeability of mosaic membranes composed of selectively anion-permeable and selectively cation-permeable parts, and its experimental verification. II. A quantitative test of the theory in model systems which do not involve the use of auxiliary electrodes, 613

NORTHROP, JOHN H. Apparatus for maintaining bacterial cultures in the steady state, 105

PAIK, WOON KI. See KAPLAN, 197

PONDER, ERIC. The specific heat and the heat of compression of human red cells, sickled red cells, and paracrystalline rat red cells, 575

RENKIN, EUGENE M. Filtration, diffusion, and molecular sieving through porous cellulose membranes, 225

RODENBERG, SIDNEY D. See COMMONER and RODENBERG, 475

SCHWEMMIN, DONALD. See HALVORSON, FRY, and SCHWEMMIN, 549

SHEPARD, D. C. See BRANDT, SHEPARD, and GIESE, 295

SHRAGER, S. See BAER, SHRAGER, and KRUEGER, 683

SMALL, MELVIN D., BREAN, JOHN W., and FARRAR, JOHN T. An application of autocorrelation methods to the interpretation of intestinal motility records, 695

SMITH, LUCILE SCHULTZ, and KRUEGER, ALBERT PAUL. Characteristics of a new vibrio-bacteriophage system, 161

SMITH, PATRICIA H. See WALD, BROWN, and SMITH, 623

SOLLNER, KARL. See NEIHOF and SOLLNER, 613

SOLOMON, A. K., and GOLD, G. LENNARD. Potassium transport in human erythrocytes: evidence for a three compartment system, 371

—. See GOLD and SOLOMON, 389

STANNARD, J. N. See BAIR and STANNARD, 493, 505

STENT, GUNTHER S. Decay of incorporated radioactive phosphorus during reproduction of bacteriophage T2, 853

— and FUERST, CLARENCE R. Inactivation of bacteriophages by decay of incorporated radioactive phosphorus, 441

STERN, HERBERT, and TIMONEN, S. The position of the cell nucleus in pathways of hydrogen transfer: cytochrome C, flavoproteins, glutathione, and ascorbic acid, 41

SUSSMAN, ALFRED S. Changes in the permeability of ascospores of *Neurospora tetrasperma* during germination, 59

TIMONEN, S. See STERN and TIMONEN, 41

USSING, HANS H. See DEYRUP and USSING, 599

—. See KALMAN and USSING, 361

VIS, V. A. The mercury–hydrogen peroxide system as an analogue of nervous transmission, 17

WALD, GEORGE, BROWN, PAUL K., and SMITH, PATRICIA H. Iodopsin, 623

WALTERS, C. P. See KRAHL, KELTCH, WALTERS, and CLOWES, 31, 431

WASSERMAN, AARON E., LESSNER, JAMES M., and WEST, MARGARET K. Reversal of the streptomycin injury of *Escherichia coli*, 213

WEST, MARGARET K. See WASSERMAN, LESSNER, and WEST, 213

WILLS, JOYCE P. See HUF, WILLS, and ARRIGHI, 867

YAMADA, MAS. See COMMONER and YAMADA, 459

YOCUM, C. S., and BLINKS, L. R. Photosynthetic efficiency of marine plants, 1

INDEX TO SUBJECTS

ACID, amino, incorporation into serum proteins, kinetics, 283
—, amino, pool, free, properties, and enzyme synthesis in yeast, 549
—, ascorbic, cytochrome C, flavoproteins, and glutathione, position of cell nucleus in pathways of hydrogen transfer, 41
Acids, nucleic, conservation during bacterial growth, 145
Aldolase, threonine, in enzymatic breakdown of threonine, 181
Amino acid incorporation into serum proteins, kinetics, 283
— acid pool, free, properties, and enzyme synthesis in yeast, 549
Anion-permeable, selectively, and cation-permeable, selectively, parts, electrochemical theory of electrolyte permeability of mosaic membranes composed of, 613
Antidiuretic hormone, active sodium uptake by toad and response to, 361
Apparatus for maintaining bacterial cultures in steady state, 105
Arbacia punctulata eggs, glucose-6-phosphate and 6-phosphogluconate dehydrogenases from, 431
— *punctulata*, eggs, hexokinase activity, 31
Ascorbic acid, cytochrome C, flavoproteins, and glutathione, position of cell nucleus in pathways of hydrogen transfer, 41
Ascospores, *Neurospora tetrasperma*, changes in permeability during germination, 59
Autocorrelation methods, application to interpretation of intestinal motility records, 695
Axon, giant, of *Loligo*, bioelectric effects of ions microinjected into, 245

BACTERIAL cultures in steady state, apparatus for maintaining, 105
— growth, conservation of nucleic acids during, 145
Bacteriophage production and lysis in three phage systems, effect of iodoacetate and other inhibitors on, 683
— T2, decay of incorporated radioactive phosphorus during reproduction, 853
Bacteriophages, inactivation by decay of incorporated radioactive phosphorus, 441
Bacteriophage-vibrio system, new, characteristics, 161
Bioelectric effects of ions microinjected into *Loligo* giant axon, 245
Biological activities of altering agents and surface, relation between in alteration of intracellular enzymes, 197
Blood cells, red. *See* Erythrocytes.
— thrombokinase, effect as influenced by soy bean trypsin inhibitor, ultracentrifugation, and accessory factors, 757
Blood-clotting factors and serum proteins, chromatography on diatomaceous earth columns, 743

CALCIUM and magnesium, binding by contractile elements, 735
—, sodium, potassium, and magnesium, behavior of isolated hearts of grasshopper, *Chortophaga viridi-*

fasciata, and moth, *Samia walkeri*, in solutions with different concentrations of, 79
Catalase, yeast, altered and unaltered, effect of temperature on kinetics, 515
Cation-permeable, selectively, and anion-permeable, selectively, parts, electrochemical theory of electrolyte permeability of mosaic membranes composed of, 613
Cell nucleus, position in pathways of hydrogen transfer, cytochrome C, flavoproteins, glutathione, and ascorbic acid, 41
— permeability, uptake of pyruvate by yeast, 425
Cells, blood, red. *See* Erythrocytes.
—, intracellular enzymes, alteration, effect of temperature on kinetics of altered and unaltered yeast catalase, 515
—, intracellular enzymes, alteration, relation between surface and biological activities of altering agents, 197
—, non-dividing, protein metabolism in chromosomes of, 415
Cellulose membranes, porous, filtration, diffusion, and molecular sieving through, 225
Centrifugation, ultra-, soy bean trypsin inhibitor, and accessory factors, effect of blood thrombokinase as influenced by, 757
Chemical, electro-, theory, of electrolyte permeability of mosaic membranes composed of selectively anion-permeable and cation-permeable parts, 613
Chortophaga viridifasciata and *Samia walkeri*, isolated hearts, behavior in solutions with different concentrations of sodium, potassium, calcium, and magnesium, 79
Chromatography of blood-clotting factors and serum proteins on diatomaceous earth columns, 743
Chromosomes of non-dividing cells, protein metabolism in, 415
Contractile elements, binding of calcium and magnesium by, 735
— elements, magnesium, and pyrophosphate, interactions between, 53
Crystalline trypsin, dilute solutions, inactivation by x-radiation, effects of enzyme concentration, medium, hydrogen ion concentration, and temperature, 581
— trypsin, dilute solutions, inactivation by x-radiation, kinetics and characteristics, 93
Cultivation, bacterial, in steady state, apparatus for maintaining, 105
Cytochrome C, flavoproteins, glutathione, and ascorbic acid, position of cell nucleus in pathways of hydrogen transfer, 41

DECAY of incorporated radioactive phosphorus during reproduction of bacteriophage T2, 853
— of incorporated radioactive phosphorus, inactivation of bacteriophages by, 441
Dehydrogenases, glucose-6-phosphate and 6-phosphogluconate, from eggs of sea urchin, *Arbacia punctulata*, 431
Didinium nasutum, effect of nutritional state on photoreversal of ultraviolet injuries in, 295
Diffusion, filtration, and molecular sieving through porous cellulose membranes, 225
Dowex 50 treatment and starving, effect on growth of normal and x-irradiated yeast, 505

EARTH columns, diatomaceous, chromatography of blood-clotting factors and serum proteins on, 743
Eel, electric, electroplaques, mechanisms of direct and neural excitability in, 319

Eggs, sea urchin, *Arbacia punctulata*, glucose-6-phosphate and 6-phosphogluconate dehydrogenases from, 431
—, sea urchin, *Arbacia punctulata*, hexokinase activity, 31
Electric eel, electroplaques, mechanisms of direct and neural excitability in, 319
Electrochemical theory of electrolyte permeability of mosaic membranes composed of selectively anion-permeable and selectively cation-permeable parts, 613
Electrolyte distribution and active salt uptake in frog skin, 867
— permeability of mosaic membranes composed of selectively anion-permeable and selectively cation-permeable parts, electrochemical theory, 613
Electrolytes and starvation, role in altering apparent radiosensitivity of bakers' yeast, 493
Electroplaques of electric eel, mechanisms of direct and neural excitability in, 319
Embryonic development of mealworm, *Tenebrio molitor* Linnaeus, relationship between activity of succinoxidase system and rate of oxygen consumption during, 729
Enzymatic breakdown of threonine by threonine aldolase, 181
Enzyme concentration, medium, hydrogen ion concentration, and temperature, effects on inactivation of dilute solutions of crystalline trypsin by x-radiation, 581
— synthesis in yeast and properties of free amino acid pool, 549
Enzymes, intracellular, alteration, effect of temperature on kinetics of altered and unaltered yeast catalase, 515
—, intracellular, alteration, relation between surface and biological activities of altering agents, 197
Erythrocytes, human, potassium transport in, evidence for three compartment system, 371
—, human, sickled red cells, and paracrystalline rat red cells, specific heat and heat of compression, 575
—, human, transport of sodium into *in vivo*, 389
Escherichia coli, streptomycin injury, reversal, 213
Esterase distribution in gastric mucosa, 141
Excitability, direct and neural, in electroplaques of electric eel, mechanisms, 319
— of spinal motoneurons, temporal fluctuation in, influence on monosynaptic reflex response, 801

FIBERS, afferent, of muscle nerves, relation of function to diameter in, 117
—, dorsal root unmedullated, on two sides of ganglion, properties, 709
—, muscle, extracted, relaxation in, 149
Filtration, diffusion, and molecular sieving through porous cellulose membranes, 225
Flavoproteins, cytochrome C, glutathione, and ascorbic acid, position of cell nucleus in pathways of hydrogen transfer, 41
Freezing, inactivation of typhus rickettsiae by, 169

GANGLION, properties of dorsal root unmedullated fibers on two sides of, 709
Gastric mucosa, distribution of esterase in, 141
Germination, changes in permeability of *Neurospora tetrasperma* ascospores during, 59
Glucose-6-phosphate and 6-phosphogluconate dehydrogenases from eggs of sea urchin, *Arbacia punctulata*, 431

Glutathione, cytochrome C, flavoproteins, and ascorbic acid, position of cell nucleus in pathways of hydrogen transfer, 41
Grasshopper, *Chortophaga viridifasciata*, and moth, *Samia walkeri*, isolated hearts, behavior in solutions with different concentrations of sodium, potassium, calcium, and magnesium, 79
Growth, bacterial, conservation of nucleic acids during, 145
— of normal and x-irradiated yeast, effect of starving and dowex 50 treatment, 505

HEARTS, isolated, of grasshopper, *Chortophaga viridifasciata*, and moth, *Samia walkeri*, behavior in solutions with different concentrations of sodium, potassium, calcium, and magnesium, 79
Heat, specific, and heat of compression of human red cells, sickled red cells, and paracrystalline rat red cells, 575
Hexokinase activity from eggs of sea urchin, *Arbacia punctulata*, 31
Histones with high lysine content, 405
Hormone, antidiuretic, active sodium uptake by toad and response to, 361
Hydrogen ion concentration, enzyme concentration, medium, and temperature, effects on inactivation of dilute solutions of crystalline trypsin by x-radiation, 581
— peroxide and mercury system, analogue of nervous transmission, 17
— transfer pathways, cytochrome C, flavoproteins, glutathione, and ascorbic acid, position of cell nucleus, 41

INJECTION, micro-, of ions into *Loligo* giant axon, bioelectric effects, 245
Intestinal motility records, application of autocorrelation methods to interpretation of, 695
Iodoacetate and other inhibitors, effect on bacteriophage production and lysis in three bacteriophage systems, 683
Iodopsin, 623
Ions microinjected into *Loligo* giant axon, bioelectric effects, 245

KINETICS and characteristics of inactivation of crystalline trypsin dilute solutions by x-radiation, 93
— of altered and unaltered yeast catalase, effect of temperature, 515
— of amino acid incorporation into serum proteins, 283

LOLIGO, giant axon, bioelectric effects of ions microinjected into, 245
Lysine content, high, histones with, 405
Lysis and bacteriophage production in three bacteriophage systems, effect of iodoacetate and other inhibitors, 683

MAGNESIUM and calcium, binding by contractile elements, 735
—, pyrophosphate, and contractile elements, interactions between, 53
—, sodium, potassium, and calcium, behavior of isolated hearts of grasshopper, *Chortophaga viridifasciata*, and moth, *Samia walkeri*, in solution with different concentrations of, 79
Man, erythrocytes, potassium transport in, evidence for three compartment system, 371
—, red cells, sickled red cells, and paracrystalline rat red cells, specific heat and heat of compression, 575

Man, transport of sodium into erythrocytes *in vivo*, 389
Marine plants, photosynthetic efficiency, 1
Mealworm, *Tenebrio molitor* Linnaeus, relationship between activity of succinoxidase system and rate of oxygen consumption during embryonic development of, 729
Membranes, cellulose, porous, filtration, diffusion, and molecular sieving through, 225
—, mosaic, composed of selectively anion-permeable and selectively cation-permeable parts, electrochemical theory of electrolyte permeability, 613
Mercury–hydrogen peroxide system as analogue of nervous transmission, 17
Metabolism, protein, in chromosomes of non-dividing cells, 415
Microinjection of ions into *Loligo* giant axon, bioelectric effects, 245
Molecular sieving, filtration, and diffusion through porous cellulose membranes, 225
Monosynaptic reflex connections, homonymous and heteronymous, of individual motoneurons, transmitter potentiality, 789
— reflex response of spinal motoneurons to graded afferent stimulation, 813
— reflex response, temporal fluctuation in excitability of spinal motoneurons and influence on, 801
— reflex responses of individual motoneurons, 771
— spinal reflex systems, fractionated, transmission in, 307
Mosaic membranes composed of selectively anion-permeable and selectively cation-permeable parts, electrochemical theory of electrolyte permeability, 613
— virus, tobacco, non-virus proteins associated with, 459
Mosaic virus, tobacco, and non-virus proteins, relationships between, 475
Moth, *Samia walkeri*, and grasshopper, *Chortophaga viridifasciata*, isolated hearts, behavior in solutions with different concentrations of sodium, potassium, calcium, and magnesium, 79
Motoneurons, individual, monosynaptic reflex responses, 771
—, individual, transmitter potentiality of homonymous and heteronymous monosynaptic reflex connections of, 789
—, spinal, excitability, temporal fluctuation in, influence on monosynaptic reflex response, 801
—, spinal, monosynaptic reflex response to graded afferent stimulation, 813
Mucosa, gastric, distribution of esterase in, 141
Muscle fibers, extracted, relaxation in, 149
— nerves, relation of function to diameter in afferent fibers of, 117

NERVES, muscle, relation of function to diameter in afferent fibers of, 117
Nervous transmission, mercury–hydrogen peroxide system as analogue of, 17
Neural and direct excitability in electroplaques of electric eel, mechanisms, 319
Neurospora tetrasperma ascospores, changes in permeability during germination, 59
Nucleic acids, conservation during bacterial growth, 145
Nucleus, cell, position in pathways of hydrogen transfer, cytochrome C, flavoproteins, glutathione, and ascorbic acid, 41
Nutritional state, effect on photoreversal of ultraviolet injuries in *Didinium nasutum*, 295

OXYGEN consumption, rate, and activity of succinoxidase system, relationship during embryonic development of mealworm, *Tenebrio molitor* Linnaeus, 729

PARACRYSTALLINE rat red cells, human red cells, and sickled red cells, specific heat and heat of compression, 575
Permeability, cell, uptake of pyruvate by yeast, 425
—, electrolyte, of mosaic membranes composed of selectively anion-permeable and selectively cation-permeable parts, electrochemical theory, 613
— of *Neurospora tetrasperma* ascospores, changes in, during germination, 59
Phage. *See* Bacteriophage.
Phosphate, pyro-, magnesium, and contractile elements, interactions between, 53
6-Phosphogluconate and glucose-6-phosphate dehydrogenases from eggs of sea urchin, *Arbacia punctulata*, 431
Phosphorus, radioactive, incorporated, decay during reproduction of bacteriophage T2, 853
—, radioactive, incorporated, inactivation of bacteriophages by decay of, 441
Photoreversal of ultraviolet injuries in *Didinium nasutum*, effect of nutritional state, 295
Photosynthetic efficiency of marine plants, 1
Plants, marine, photosynthetic efficiency, 1
Porous cellulose membranes, filtration, diffusion, and molecular sieving through, 225
Potassium, sodium, calcium, and magnesium, behavior of isolated hearts of grasshopper, *Chortophaga viridifasciata*, and moth, *Samia walkeri*, in solutions with different concentrations of, 79
Potassium transport in human erythrocytes, evidence for three compartment system, 371
Protein metabolism in chromosomes of non-dividing cells, 415
Proteins, non-virus, associated with tobacco mosaic virus, 459
—, non-virus, and tobacco mosaic virus, relationships between, 475
—, serum, and blood-clotting factors, chromatography on diatomaceous earth columns, 743
—, serum, kinetics of amino acid incorporation into, 283
Pyrophosphate, magnesium, and contractile elements, interactions between, 53
Pyruvate uptake by yeast, 425

RADIOACTIVE phosphorus, incorporated, decay during reproduction of bacteriophage T2, 853
— phosphorus, incorporated, inactivation of bacteriophages by decay of, 441
— sulfate, accumulation by rat tissue, *in vitro*, of sulfate labelled with, 599
Radiosensitivity, apparent, of bakers' yeast, role of electrolytes and starvation in altering, 493
Reflex connections, monosynaptic, homonymous and heteronymous, of individual motoneurons, transmitter potentiality, 789
— response, monosynaptic, of spinal motoneurons, to graded afferent stimulation, 813
— response, monosynaptic, temporal fluctuation in excitability of spinal motoneurons and influence on, 801
— responses, monosynaptic, of individual motoneurons, 771
— systems, spinal, fractionated monosynaptic, transmission in, 307
Relaxation in extracted muscle fibers, 149

Reproduction of bacteriophage T2, decay of incorporated radioactive phosphorus during, 853
Rickettsiae, typhus, reversible inactivation, 169
Roentgen rays, inactivation of crystalline trypsin dilute solutions by, 93, 581
— rays, radiation of yeast, effect of starving and dowex 50 treatment on growth after, 505
Root, dorsal, unmedullated fibers, on two sides of ganglion, properties, 709

SALT uptake, active, and electrolyte distribution in frog skin, 867
Samia walkeri and *Chortophaga viridifasciata*, isolated hearts, behavior in solutions with different concentrations of sodium, potassium, calcium, and magnesium, 79
Sea urchin, *Arbacia punctulata*, eggs, glucose-6-phosphate and 6-phosphogluconate dehydrogenases from, 431
— urchin, *Arbacia punctulata*, eggs, hexokinase activity, 31
Serum proteins and blood-clotting factors, chromatography on diatomaceous earth columns, 743
— proteins, kinetics of amino acid incorporation into, 283
Sickled red cells, human red cells, and paracrystalline rat red cells, specific heat and heat of compression, 575
Sieving, molecular, filtration, and diffusion through porous cellulose membranes, 225
Skin, frog, electrolyte distribution and active salt uptake in, 867
Sodium, potassium, calcium, and magnesium, behavior of isolated hearts of grasshopper, *Chortophaga viridifasciata*, and moth, *Samia walkeri*, in solutions with different concentrations of, 79
— transport into human erythrocytes *in vivo*, 389
Sodium uptake, active, by toad, and its response to antidiuretic hormone, 361
Soy bean trypsin inhibitor, ultracentrifugation, and accessory factors, effect of blood thrombokinase as influenced by, 757
Specific heat and heat of compression of human red cells, sickled red cells, and paracrystalline rat red cells, 575
Spinal motoneurons, excitability, temporal fluctuation in, influence on monosynaptic reflex response, 801
— motoneurons, monosynaptic reflex response to graded afferent stimulation, 813
— reflex systems, fractionated monosynaptic, transmission in, 307
Starvation and dowex 50 treatment, effect on growth of normal and x-irradiated yeast, 505
— and electrolytes, role in altering apparent radiosensitivity of bakers' yeast, 493
Stimulation, graded afferent, monosynaptic reflex response of spinal motoneurons to, 813
—, taste, theory, 133
Streptomycin injury of *Escherichia coli*, reversal, 213
Succinoxidase system, activity, and rate of oxygen consumption, relationship during embryonic development of mealworm, *Tenebrio molitor* Linnaeus, 729
Sulfate labelled with radioactive sulfate, accumulation by rat tissue *in vitro*, 599

TASTE stimulation, theory, 133
Temperature, effect on kinetics of altered and unaltered yeast catalase, 515
—, enzyme concentration, medium, and hydrogen ion concentration, effects on inactivation of dilute solutions of crystalline trypsin by x-radiation, 581

Temporal fluctuation in excitability of spinal motoneurons, influence on monosynaptic reflex response, 801
Tenebrio molitor Linnaeus, relationship between activity of succinoxidase system and rate of oxygen consumption during embryonic development of, 729
Threonine, enzymatic breakdown by threonine aldolase, 181
Thrombokinase, blood, effect as influenced by soy bean trypsin inhibitor, ultracentrifugation, and accessory factors, 757
Tissue, rat, accumulation *in vitro* of sulfate labelled with radioactive sulfate by, 599
Toad, active sodium uptake, and response to antidiuretic hormone, 361
Tobacco mosaic virus, non-virus proteins associated with, 459
— mosaic virus and non-virus proteins, relationships between, 475
Transmission in fractionated monosynaptic spinal reflex systems, 307
—, nervous, mercury–hydrogen peroxide system as analogue of, 17
Transmitter potentiality of homonymous and heteronymous monosynaptic reflex connections of individual motoneurons, 789
Trypsin, crystalline, dilute solutions, inactivation by x-radiation, effects of enzyme concentration, medium, hydrogen ion concentration, and temperature, 581
—, crystalline, dilute solutions, inactivation by x-radiation, kinetics and characteristics, 93
Trypsin inhibitor, soy bean, ultracentrifugation, and accessory factors, effect of blood thrombokinase as influenced by, 757
Typhus rickettsiae, reversible inactivation, 169

ULTRACENTRIFUGATION, soy bean trypsin inhibitor, and accessory factors, effect of blood thrombokinase as influenced by, 757
Ultraviolet injuries in *Didinium nasutum*, effect of nutritional state on photoreversal, 295

VIBRIO-BACTERIOPHAGE system, new, characteristics, 161
Virus, tobacco mosaic, non-virus proteins associated with, 459
—, tobacco mosaic, and non-virus proteins, relationships between, 475

X-RAYS. *See* Roentgen rays.

YEAST, bakers', apparent radiosensitivity, role of electrolytes and starvation in altering, 493
— catalase, altered and unaltered, effect of temperature on kinetics, 515
—, normal and x-irradiated, effect of starving and dowex 50 treatment on growth, 505
—, properties of free amino acid pool and enzyme synthesis, 549
—, pyruvate uptake by, 425